



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/650,566	08/30/2000	Kishore K. Chakravorty	884.315US1	8541

21186 7590 10/03/2003

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER

PHAN, THANH S

ART UNIT PAPER NUMBER

2841

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/650,566

Applicant(s)

CHAKRAVORTY ET AL.

Examiner

Thanh S Phan

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 28-50 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 28-50 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 17. 6) ☐ Other: .

DETAILED ACTION

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 10, 40 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Branchevsky [US 6,252,761] in view of Arima et al. [US 5,281,151].

Branchevsky teaches a ceramic substrate [figure 12] comprising an embedded capacitor with multiple terminals/electrodes to provide electrical connection [column2, lines 54-59; column3, line 13].

Branchevsky discloses the instant claimed invention except for the use of an organic portion to support the conductors of the substrate.

Arima et al. disclose a multilayer substrate for mounting a die [figure 1] comprising: a ceramic portion [2] comprising a plurality of lands on its first and second surface; an organic portion [3] comprising a plurality of conductors [7, 8].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Arima with the substrate of Branchevsky for the purpose of providing greater heat resistance.

Claims 2-4, 6, 28-32, 34, 36, 41 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Branchevsky, as modified, as applied to claim 1 above, and further in view of Saia et al. [US 5,736,448].

Branchevsky, as modified, disclose the instant claimed invention except for the specific arrangement of lands and connections.

Saia et al. disclose a capacitor [54] having a plurality of lands and plate interconnections [figure 9].

It would have been obvious to a person having ordinary skill in the art at the time invention was made to use the land/interconnection design of Saia et al. for the capacitor of Branchevsky, as modified, for the purpose of providing multiple capacitances.

Regarding claims 28-30, the method steps are necessitated by the apparatus structures.

Claims 5, 33, 35 and 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Branchevsky, as modified, as applied to claim 4 above, and further in view of Figueroa et al. [US 6,532,143].

Branchevsky, as modified, disclose the instant claimed invention except for: the specific pitch of the lands within the multi-layer substrate.

Figueroa et al. disclose a multi-layer capacitor having a plurality of lands [figure 13] arranged at various pitches [column 11, line 66 to column 12, line 9].

It would have been obvious to a person having ordinary skill in the art at the time invention was made to use adjust the pitch of the lands in the capacitor of Branchevsky, as modified, as suggested by Figueroa et al. for the purpose of controlling the inductances.

Claims 7-9, 37-39 and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Branchevsky, as modified, as applied to claim 1 above, and further in view of Katou et al. [JP 10-163447].

Branchevsky, as modified, disclose the instant claimed invention except for: the specific permittivities of the capacitor layers.

Katou et al. disclose a multi-layer capacitor [figure 2] having varying permittivity film layers.

It would have been obvious to a person having ordinary skill in the art at the time invention was made to vary the permittivity of the various layers of Branchevsky, as modified, as suggested by Katou et al., for the purpose of controlling the electrical characteristics of the capacitor.

Response to Arguments

Applicant's arguments with respect to claims 1-10, and 28-40 have been considered but are moot in view of the new ground(s) of rejection.

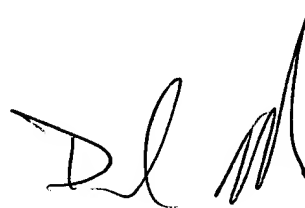
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh S Phan whose telephone number is 703-305-0069. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David S Martin can be reached on 703-308-3121. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

tsp

A handwritten signature in black ink, appearing to read 'DM', is positioned above the printed name and title.

DAVID MARTIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800